National Wetlands Inventory

Fisheries and Habitat Conservati

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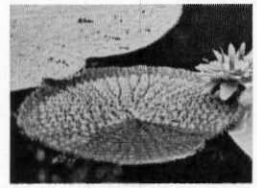
Wetlands provide a multitude of ecological, economic and social benefits. They provide habitat for fish, wildlife and a variety of plants. Wetlands are nurseries for many saltwater and freshwater fishes and shellfish of commercial and recreational importance. Wetlands are also important landscape features because they hold and slowly release flood water and snow melt, recharge groundwater, act as filters to cleanse water of impurities, recycle nutrients, and provide recreation and wildlife viewing opportunities for millions of people.



Wetlands Mapper

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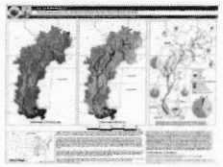
Frequently Asked Questions

NWI Program

Latest News and Reports

Status and Trends of Wetlands in the Conterminous United States 2004 to 2009: Report to Congress on the status and trends of our Nation's wetlands resources

This report is the latest in a continuous series spanning 50 years of wetlands data. It represents the most comprehensive and contemporary effort to track wetlands resources at a national scale. Click here to download the report and related documents.



Characterization of Lands Inundated by the Flood Event of 2011

In April and May of 2011, flooding inundated lands along the Ohio and Lower Mississippi Rivers. Flood levels along portions of the Mississippi River peaked at the highest levels since 1937. An analysis of the extent of flooding was determined by the comparison of MODIS imagery between pre-flood and flood crest conditions. Click here to download (67MB PDF document).

Free Publications

We have a limited amount of hard copy publications available for free: 2000 and 2006 **Status and Trends Reports**, **Classification of Wetlands and Deepwater Habitats**, and **Wetlands Coloring Books**. Send your request (name and address) to Wetlands_Team@fws.gov.

Data Collection Requirements and Procedures for Mapping Wetland, Deepwater and Related Habitats

With the adoption of a new Federal Wetlands Mapping Standards, the USFWS has developed an important

Pinson Valley PA
Ref. 21

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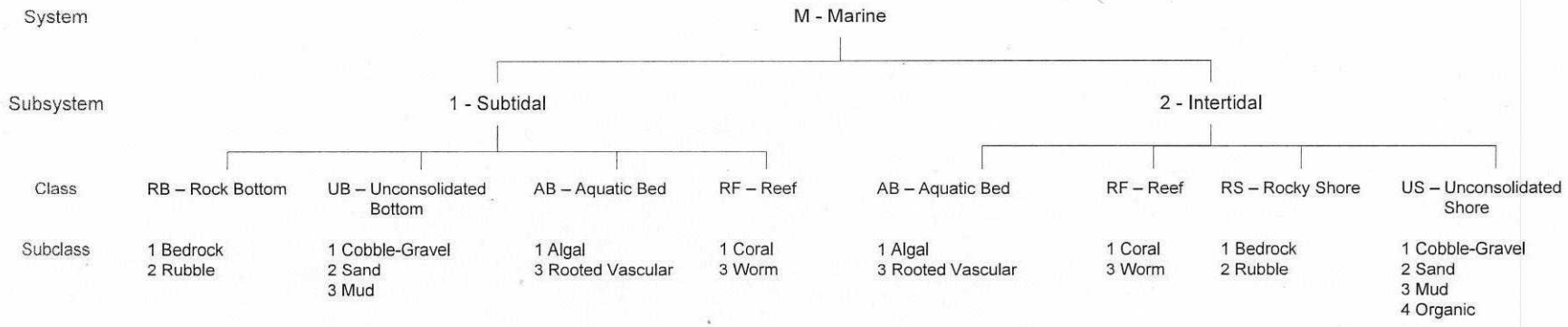
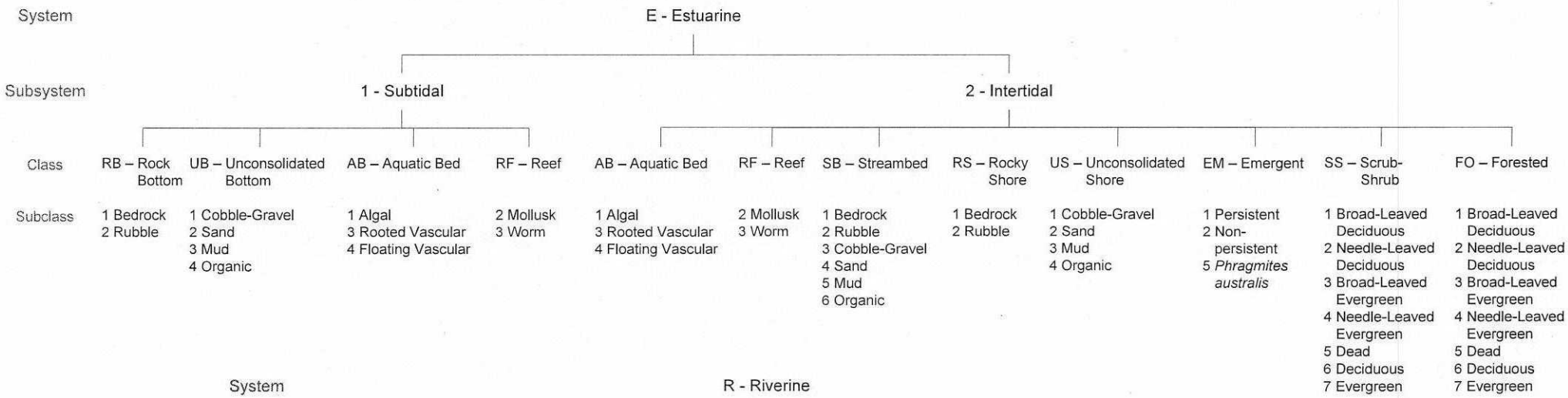
companion document (1MB PDF) that describes the technical procedures and requirements for wetlands map data. The document is intended to aid organizations or individuals mapping wetlands and applying the Cowardin *et al.* classification system. It explains the appropriate application of wetland classification and mapping process, and how to achieve the data quality requirements now required in the new FGDC Standards.

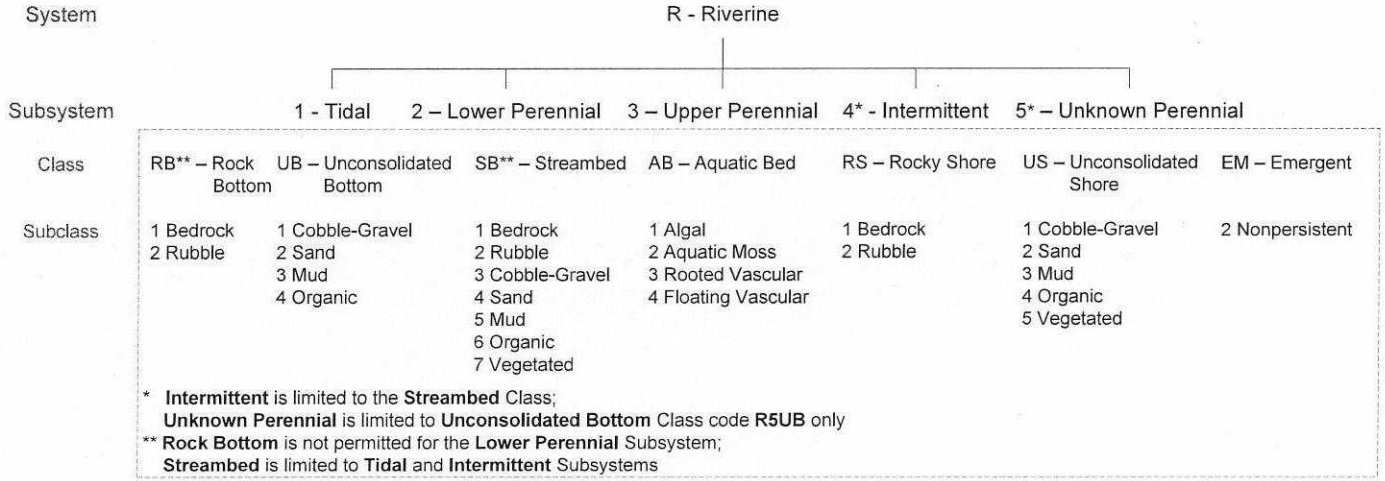
Please visit our News page for a complete list of the latest News and Reports.

Last updated: 04/09/2012 14:25:58

WETLANDS AND DEEPWATER HABITATS CLASSIFICATION

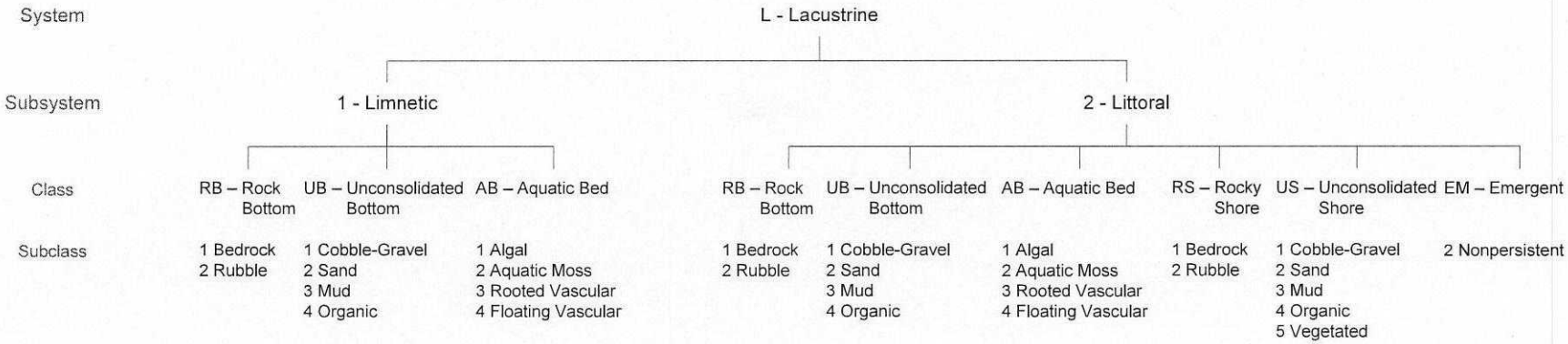


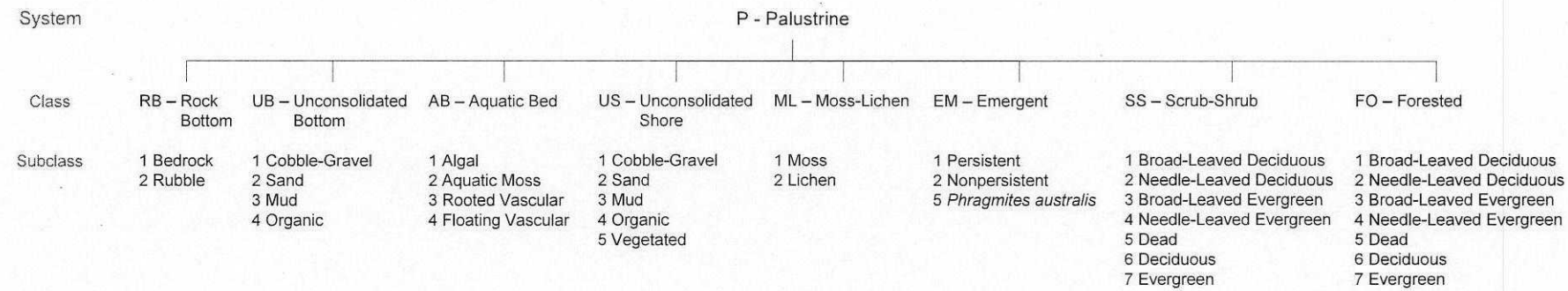




Classification of Wetlands and Deepwater Habitats of the United States, Cowardin *et al.* 1979

WETLANDS AND DEEPWATER HABITATS CLASSIFICATION





MODIFIERS

In order to more adequately describe the wetland and deepwater habitats, one or more of the water regime, water chemistry, soil, or special modifiers may be applied at the class or lower level in the hierarchy. The farmed modifier may also be applied to the ecological system.

Water Regime			Special Modifiers	Water Chemistry			Soil
Nontidal	**Saltwater Tidal**	**Freshwater Tidal**		**Coastal Halinity**	**Inland Salinity**	**pH Modifiers for all Fresh Water**	
A Temporarily Flooded	L Subtidal	S Temporarily Flooded-Tidal	b Beaver	1 Hyperhaline	7 Hypersaline	a Acid	g Organic
B Saturated	M Irregularly Exposed	R Seasonally Flooded-Tidal	d Partly Drained/Ditched	2 Euhaline	8 Eusaline	t Circumneutral	n Mineral
C Seasonally Flooded	N Regularly Flooded	T Semipermanently Flooded-Tidal	f Farmed	3 Mixohaline (Brackish)	9 Mixosaline	i Alkaline	
E Seasonally Flooded/ Saturated	P Irregularly Flooded	V Permanently Flooded-Tidal	h Diked/Impounded	4 Polyhaline	0 Fresh		
F Semipermanently Flooded			r Artificial	5 Mesohaline			
G Intermittently Exposed			s Spoil	6 Oligohaline			
H Permanently Flooded			x Excavated	0 Fresh			
J Intermittently Flooded							
K Artificially Flooded							

Wetlands and Deepwater Habitats Mapping Codes

Class/Subclass		Code	System and Subsystem: Marine Subtidal M1	Marine Intertidal M2	Estuarine Subtidal E1	Estuarine Intertidal E2	Riverine† Tidal R1	Riverine† Lower Perennial R2	Riverine† Upper Perennial R3	Riverine† Intermittent R4	Lacustrine Limnetic L1	Lacustrine Littoral L2	Palustrine N/A P	Water Regimes
	Rock Bottom	RB												Nontidal F, G, H, K Tidal L, T*, V*
	Bedrock	RB1												
	Rubble	RB2												
	Unconsolidated Bottom	UB												Nontidal F, G, H, K Tidal L, T*, V*
	Cobble-Gravel	UB1												
	Sand	UB2												
	Mud	UB3												
	Organic	UB4												
	Aquatic Bed	AB												Nontidal C, F, G, H, K Tidal L, M, N, R*, T*, V*
	Algal	AB1												
	Aquatic Moss	AB2												
	Rooted Vascular	AB3												
	Floating Vascular	AB4												
	Reef	RF												Tidal L, M, N, P
	Coral	RF1												
	Mollusk	RF2												
	Worm	RF3												
	Streambed	SB												Nontidal A, C, J, K Tidal M, N, P, R*, S*
	Bedrock	SB1												
	Rubble	SB2												
	Cobble-Gravel	SB3												
	Sand	SB4												
	Mud	SB5												
	Organic	SB6												
	Vegetated (pioneer plants)	SB7												
	Rocky Shore	RS												Nontidal A, C, J, K Tidal M, N, P, R*, S*
	Bedrock	RS1												
	Rubble	RS2												
	Unconsolidated Shore	US												Nontidal A, C, J, K Tidal M, N, P, R*, S*
	Cobble-Gravel	US1												
	Sand	US2												
	Mud	US3												
	Organic	US4												
	Vegetated (pioneer plants)	US5												

† **Unknown Perennial R5** - This Subsystem designation was created specifically for use when the distinction between Lower Perennial, Upper and Tidal subsystems cannot be made through remote sensing and no supplementary data are available. Use is limited to the Unconsolidated Bottom class. The only valid code is R5UB.

* Tidally influenced freshwater systems.

Valid Invalid

Table Revised June 23, 2010

Wetlands and Deepwater Habitats Mapping Codes *continued*

Class/Subclass		Code	System and Subsystem: Marine Subtidal M1	Marine Intertidal M2	Estuarine Subtidal E1	Estuarine Intertidal E2	Riverine Tidal R1	Riverine Lower Perennial R2	Riverine Upper Perennial R3	Riverine Intermittent R4	Lacustrine Limnetic L1	Lacustrine Littoral L2	Palustrine N/A P	Water Regimes
	Moss-Lichen	ML												Nontidal B
	Moss	ML1												
	Lichen	ML2												
	Emergent	EM												Nontidal A, B, C, E, F, G, H, J, K Tidal N, P, R*, S*, T*
	Persistent	EM1												
	Phragmites	EM5												
	Nonpersistent	EM2												Nontidal F, G, H, K Tidal N and T*
	Scrub-Shrub	SS												Nontidal A, B, C, E, F, G, H, J, K Tidal M, N, P, R*, S*, T*
	Broad-leaved Deciduous	SS1												
	Needle-leaved Deciduous	SS2												
	Broad-leaved Evergreen	SS3												
	Needle-leaved Evergreen	SS4												
	Dead	SS5												
	Deciduous	SS6												
	Evergreen	SS7												
	Forested	FO												Nontidal A, B, C, E, F, G, H, J, K Tidal M, N, P, R*, S*, T*
	Broad-leaved Deciduous	FO1												
	Needle-leaved Deciduous	FO2												
	Broad-leaved Evergreen	FO3												
	Needle-leaved Evergreen	FO4												
	Dead	FO5												
	Deciduous	FO6												
	Evergreen	FO7												

* Tidally influenced freshwater systems.

Valid Invalid

MODIFIERS

In order to more adequately describe wetlands and deepwater habitats, one or more of the special, water chemistry, or soil modifiers may be applied to classes or subclasses. The farmed modifier may also be applied to the Palustrine System level.

Water Regime Modifiers

Nontidal		Saltwater tidal	
A	Temporarily Flooded	L	Subtidal
B	Saturated	M	Irregularly Exposed
C	Seasonally Flooded	N	Regularly Flooded
E	Seasonally Flooded / Saturated	P	Irregularly Flooded
F	Semipermanently Flooded	**Freshwater Tidal**	
G	Intermittently Exposed	S	Temporarily Flooded -Tidal
H	Permanently Flooded	R	Seasonally Flooded-Tidal
J	Intermittently Flooded	T	Semipermanently Flooded-Tidal
K	Artificially Flooded	V	Permanently Flooded-Tidal

Special Modifiers

These Codes are used to indicate habitats modified or created by man or beaver. The use of only one special modifier is permitted, (e.g. PUBHx).

b	Beaver
d	Partly Drained/Ditched
f**	Farmed
h***	Diked/Impounded
r	Artificial
s	Spoil
x	Excavated

Other Modifiers

Other modifiers are not widely used during image analyses but can be applied where additional information or field work provides sufficient information.

Water Chemistry

Coastal Halinity		Inland Salinity		pH Modifiers for all Freshwater		Soil	
1	Hyperhaline	7	Hypersaline	a	Acid	g	Organic
2	Euhaline	8	Eusaline	t	Circumneutral	n	Mineral
3	Mixohaline (Brackish)	9	Mixosaline	l	Alkaline		
4	Polyhaline	0	Fresh				
5	Mesohaline						
6	Oligohaline						
0	Fresh						

** Farmed wetlands are normally Pf (Palustrine farmed) but cultivated cranberry bogs may be classified as PSSf.

*** Because the diked/impounded modifier is crucial for sea-level models, it is given priority over any other modifiers. Example, diked/impounded - spoil areas will be coded h for diked/impounded.